DEPARTMENT OF THE INTERIOR
CANADA

HON. W. J. ROCHE, *Minister*. W. W. CORY, C.M.G., *Deputy Minister*.

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W. F. KING, C.M.G., LL.D., *Director*.

Vol. I, No. 16

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BY

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MEASURES OF σ LEONIS.

BY J. B. CANNON, M.A.

Eighty-seven plates have been taken here of σ Leonis, extending over a period of five years—1908 to 1912. Eleven measures were published by Frost and Lee giving a range of 21 km.—from -17 to $+4$. The range obtained in the eighty-seven plates measured here was over 40 km.—from $-19{\cdot}6$ to $+23{\cdot}8$. However, if we exclude plates 2344, 4061, 4090, 4769 and 4905, the range is reduced as will be seen from the measures following to 23 km. In plate 2344 three lines were used; in 4061, two lines; in 4090, four lines; in 4769, three lines; in 4905, one line. It will also be seen that 4768, taken the same night as 4769, gives a velocity of $-0{\cdot}3$ km., whereas 4769 gives $+14{\cdot}4$ km. Eighty-one plates give a range of only 23 km., or approximately the same as the Yerkes results give.

The star is of type A and, although other lines appear, the lines on which the measures depend chiefly are λ 4481, H_γ and K. These are usually good and give fairly accordant results. The small range—for it must be considered small for an A-type star—makes it very difficult to obtain a period of oscillation. It is certainly a binary, but what its period may be is as yet unknown. Many values of the period were tried and, although a fraction over 17 days suits the majority of the observations fairly well, yet none of the values tried satisfy them all.

The measures are all given below and may be of assistance to anyone working on this star to use in conjunction with his own measures, or to one who has time to give to the possible determination of a period from these alone.

SUMMARY OF MEASURES OF σ LEONIS.

Plate.	Julian Day.	Vel.	Plate.	Julian Day.	Vel.
1354	2,417,986·56	−10·6	4242	2,419,150·70	− 3·9
1379	8,005·74	+ 1·9	4249	151·68	− 6·6
1387	010·75	− 2·8	4257	152·64	− 2·0
1487	047·63	−12·3	4265	153·68	+ 6·3
2233	341·86	−11·0	4274	155·70	− 9·3
2258	346·76	+10·6	4274	155·70	−12·2
2344	374·85	−19·6	4288	161·71	+ 2·1
2356	378·78	− 2·3	4302	172·61	− 7·1
2452	397·77	+ 0·7	4311	176·65	− 0·3
2539	430·68	± 0·0	4311	176·65	− 2·6
3114	686·90	− 3·7	4320	182·61	− 7·8
3216	720·85	+ 6·0	4327	183·65	− 0·6
3217	720·85	+ 3·1	4332	186·63	+ 8·1
3250	731·77	− 1·1	4337	187·63	+ 7·5
3251	731·77	+ 0·2	4362	197·59	+ 5·0
3298	740·78	− 1·9	4768	412·90	− 0·3
3299	740·78	− 2·0	4769	412·90	+11·4
3323	742·73	− 1·2	4784	414·88	+ 6·9
3343	749·72	−11·8	4798	418·90	+11·3
3344	749·72	−12·1	4807	421·87	+ 4·3
3382	773·73	+ 8·6	4808	421·87	− 1·4
3382	773·73	+ 7·2	4815	427·84	+ 9·7
3409	789·73	− 0·8	4827	433·82	+ 8·3
3424	797·63	−12·2	4845	447·75	− 0·9
3436	802·66	− 9·0	4862	461·78	− 2·1
3444	804·64	+ 0·6	4876	472·75	− 1·9
3444	804·64	− 4·1	4888	475·71	− 2·6
3453	811·62	− 2·4	4896	480·76	+ 9·3
3464	826·57	− 5·4	4905	482·71	+17·4
4043	9,098·83	+ 6·6	4909	484·71	+ 5·9
4061	102·76	+20·5	4917	487·64	+ 6·0
4061	102·76	+23·8	4925	491·74	+10·2
4090	106·69	+22·4	4935	496·70	+ 4·2
4103	109·72	− 0·7	4942	501·63	+ 3·6
4104	109·72	+ 0·8	4947	502·70	+ 4·4
4124	112·81	+11·8	4954	505·69	+ 7·7
4125	112·81	+14·1	4963	510·69	− 7·4
4132	114·76	− 9·3	4966	512·58	− 1·2
4132	114·76	− 5·5	4977	516·60	+ 8·1
4139	120·69	+ 8·1	4989	525·63	+ 8·3
4139	120·69	− 2·9	5005	526·61	− 2·7
4158	129·79	−12·5	5014	537·61	+ 4·4
4206	145·75	+ 0·2	5022	544·61	+ 0·4
4207	145·75	− 1·7	5031	557·61	− 5·9
4213	146·64	− 4·5	5039	561·59	+ 2·4
4214	146·64	− 4·3	5039	561·59	+ 2·2
4241	150·70	+ 9·3	5048	567·57	− 3·4
4241	150·70	+ 8·6	5056	572·62	+ 7·5

MEASURES OF σ LEONIS.

λ	1354		1379		1387		1487		2233		2258		2344	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
4861·527	− 29·02	½	.....		.....		.....		.....		.....		.....	
4549·766	− 19·20	1	− 5·18	1	+ 7·46	½	.....		− 30·64	¼	+ 9·55	½	.....	
4522·855	.....		+ 10·65	1	− 6·08	1½	.....		.....		.....		.....	
4481·400	− 6·44	2	+ 4·26	2½	− 2·42	1½	.....		− 25·41	1½	− 9·37	1½	− 24·74	1
4340·634	− 30·17	1	− 2·19	1½	− 6·05	1½	+ 10·44	2	− 26·68	½	− 1·20	½	− 15·16	1
4101·890	− 18·33	½	− 21·35	1½	− 18·05	2	+ 4·34	2½	− 36·67	1	+ 2·10	½	− 16·17	½
3933·825	.....		+ 7·79	2½	+ 7·01	1½	+ 7·11	2½	− 22·30	1½	.....		.....	
Weighted mean	− 17·25		+ 0·11		− 1·92		+ 6·05		− 27·02		− 3·43		− 19·49	
V_o	+ 6·77		+ 2·08		− 0·51		− 17·08		+ 16·43		+ 11·23		+ ·07	
V_l	+ ·16		− ·04		− ·10		− ·09		− ·10		+ ·09		− ·21	
Curv.	− ·28		− ·28		− ·28		− ·28		− ·28		− ·28		− ·28	
Radial Velocity	− 10·6		+ 1·9		− 2·8		− 12·3		− 11·0		+ 10·6		− 19·6	

MEASURES OF σ LEONIS—*Continued.*

λ	2356		2452		2539		3114		3216		3217		3250	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
4861·527							− 28·91	½						
4549·766			+ 9·19	½	+ 28·91	½								
4522·855														
4481·400	− 1·28	½	+ 10·70	1	+ 20·89	1			+ 4·72	1	+ 7·39	½		
4340·634	− 2·20	1	+ 3·47	1½	+ 27·62	½	− 35·64	1	+ 4·51	1	− 0·69	1	+ 0·11	½
4101·890	+ ·17	½	+ 23·47	½			− 15·99	½	+ 13·68	½	+ 0·87	½	− 4·23	½
3933·825							− 24·63	1	− 15·15	1	− 10·15	1½	− 7·23	1½
Weighted mean	+ 0·10		+ 12·62		+ 21·58		− 27·57		− 0·48		− 3·37		− 5·16	
V_a	− 1·96		− 11·40		− 24·10		+ 24·21		+ 6·91		+ 6·91		+ 4·39	
V_4	− ·13		− ·21		− ·20		− ·09		− ·17		− ·17		− ·04	
Curv.	− ·28		− ·28		− ·28		− ·28		− ·28		− ·28		− ·28	
Radial Velocity	− 2·3		+ 0·7		± 0·0		− 3·7		+ 6·0		+ 3·1		− 1·1	

MEASURES OF σ LEONIS—*Continued.*

λ	3251		3298		3299		3323		3343		3344		3382	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
4861·527	.....	.....	− 15·42	½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4549·766	.....	.....	− 12·67	½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4481·400	.....	.....	− 10·59	½	+ 8·55	½	− 5·10	½	− 1·66	½	− 6·38	½	+ 29·68	1
4340·634	− 4·28	1	+ 11·11	1	− 0·58	1	+ 7·75	½	− 6·71	1	− 14·81	1	+ 28·09	1
4101·890	− 2·69	½	+ 6·64	½	− 4·91	1	− 3·46	¼	− 14·73	½	+ 2·12	½	+ 18·66	½
3933·825	.....	.....	− 6·57	½	− 9·32	½	+ 0·66	½	− 2·83	½	+ 5·66	½	+ 5·40	½
Weighted mean	− 3·75		− 1·22		− 1·36		+ 0·45		− 6·53		− 6·84		+ 23·27	
V_a	+ 4·39		− ·28		− ·28		− 1·29		− 4·87		− 4·87		− 16·18	
V_d	− ·09		− ·12		− ·12		− ·03		− ·13		− ·13		− ·17	
Curv.	− ·28		− ·28		− ·28		− ·28		− ·28		− ·28		− ·28	
Radial Velocity	+ 0·2		− 1·9		− 2·0		− 1·2		− 11·8		− 12·1		+ 8·6	

MEASURES OF σ LEONIS—*Continued.*

λ	3382*		3409		3424		3436		3444		3444*		3453	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
4861·527					+ 14·90	½	+ 10·84	½						
4549·766					+ 9·79	1			+ 31·80	1½	+ 29·00	1	+ 27·73	1
4481·400	+ 27·37	1½	+ 19·75	1	+ 14·77	1	+ 21·23	1	+ 25·85	1	+ 19·27	1	+ 26·77	1
4340·634	+ 24·28	1	+ 23·47	1									+ 19·49	½
4101·890	+ 16·83	½	+ 31·94	½			+ 16·08	½	+ 15·92	½	+ 15·76	½	+ 25·62	1
3933·825	+ 15·12	¼	+ 17·45	1										
Weighted mean	+ 23·86		+ 21·90		+ 12·80		+ 17·34		+ 27·17		+ 22·46		+ 25·68	
V_a	− 16·18		− 22·21		− 24·57		− 25·84		− 26·27		− 26·27		− 27·63	
V_d	− ·17		− ·25		− ·13		− ·19		− ·02		− ·02		− ·17	
Curv.	− ·28		− ·28		− ·28		− ·28		− ·28		− ·28		− ·28	
Radial Velocity	+ 7·2		− 0·8		− 12·2		− 9·0		+ 0·6		− 4·1		− 2·4	

*Check measures.

MEASURES OF σ LEONIS—*Continued*

λ	3464		4043		4061		4061*		4090		4103		4104	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
1861·527	....	...	+ 8·83	½	.....		.....		.....		− 0·80	½		
1549·766	.. ..		.....											
1181·400	+ 23·02	1	.. ..		+ 22·97	½	+ 26·24	¼	+ 32·43	½	+ 2·42	1	− 0·63	
1340·634	+ 25·27	1	+ 1·62	½	+ 22·21	¼	+ 12·09	¼	+ 12·15	½	− 8·09	½	+ 7·28	½
1101·890	+ 24·00	½	− 3·47	¼	.....		.....		+ 26·81	¼	− 8·18	¼		
3933·825	+ 24·37	1	+ 2·83	1	.....		.....		+ 23·55	1				
Weighted mean	+ 24·19		+ 3·58		+ 22·71		+ 19·46		+ 23·28		+ 1·79		+ 3·33	
V_0	− 20·18		+ 3·45		+ 1·41		+ 1·41		− ·63		− 2·18		− 2·18	
V_2	− ·15		− ·19		− ·07		− ·07		+ ·04		− ·04		− ·09	
Curv.	− ·28		− ·28		− ·28		− ·28		− ·28		− ·28		− ·28	
Radial Velocity	− 5·4		+ 6·6		+ 23·8		+ 20·5		+ 22·4		− 0·7		+ 0·8	

*Check measures

MEASURES OF σ LEONIS (

λ	H.24		H.25		H.		H.27		H.		H.		H.28	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
4861.327	+ 21.89	4	+ 12.88	3	8.35	3	+ 13.32	4					9.47	4
4549.766	16.27	4			+ 5.35	3	7.33	4					4.93	4
4481.300	+ 17.48	1	+ 25.44	1	1.84	1	8.02	1	+ 20.67	1	+ 10.46	1	4.85	1
4359.651	4.69	2	+ 15.49	1	1.97	1	3.70	1	+ 18.28	1	+ 1.97	1	+ 1.62	1
4101.890			+ 15.80	1										
3933.825	+ 15.47	4	+ 9.40	4	2.08	2	+ 9.2	4	+ 11.73	3	+ 1.68	12	5.49	4
Weighted mean	+ 16.06		+ 18.44		1.18		0.31		16.11		+ 5.17		+ 0.11	
V_2	+ .78		+ .78		3.77		1.77		7.73		7.73		12.11	
V_1	.79		.24		.2		.12		.03		.03		.24	
C.33A	.28		.28		.28		.28		.28		.28		.28	
Radial Velocity	+ 11.8		+ 14.4		0.3		5.5		+ 8.1		2.9		12.5	

*Check measures.

MEASURES OF σ LEONIS—*Continued*

A –	1206		1207		1213		4211		4241		4241*		4242	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
1861·527			+ 20·56	½					+ 24·72	½	+ 20·22	1		
1549·766														
1481·400	+ 35·85	½	+ 11·93	½	+ 11·40	1	+ 17·20	1	+ 24·35	½	+ 23·84	1	+ 17·93	1
1340·634	+ 13·88	1	+ 20·25	1			+ 11·57	½	+ 17·67	½	+ 15·46	1½	+ 14·90	½
1101·800									+ 28·44	¼			+ 19·55	¼
3953·825	+ 14·98	½	+ 15·14	¼	+ 16·60	½			+ 26·43	½	+ 24·60	1½		
Weighted mean	+ 19·65		+ 17·72		+ 15·13		+ 15·32		+ 30·54		+ 29·83		+ 17·50	
V_0	18·92		18·92		19·26		19·26		20·75		20·75		20·75	
V_1	·22		·23		·06		·06		·19		·19		·20	
Corr	·28		·28		·28		·28		·28		·28		·28	
Radial Velocity	+ 0·2		– 1·7		– 4·5		– 4·3		+ 9·3		+ 8·6		– 3·0	

*Check measures

MEASURES OF σ LEONIS *Continued*

λ	4249		4257		4265		4271		4274*		4288		4303	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
4861·527	.....	..	+ 19·07	½										
4549·766														
4481·400	+ 15·68	¼	+ 19·46	½	+ 22·06	½	+ 11·99	1	+ 8·95	½	+ 26·90	½	+ 22·06	½
4340·634	+ 14·33	½	+ 19·32	1	+ 39·80	½	+ 15·12	1	+ 14·30	1	+ 17·92	½		
4101·890											+ 33·73	¼		
3933·825	+ 15·14	1	+ 20·89	1	+ 19·22	½					+ 29·62	1		
Weighted mean	+ 14·98		+ 19·83		+ 28·58		+ 13·56		10·67		+ 26·87		+ 22·06	
V_4	− 21·09		− 21·42		− 21·78		22·44		22·14		24·25		22·68	
V_2	− ·16		− ·10		− ·18		16		16		25		19	
Curv.	− ·28		− ·28		− ·28		28		28		28		28	
Radial Velocity	− 6·6		− 2·0		+ 6·3		9·4		12·2		2·4		− 7·1	

*Check measures.

MEASURES OF σ LEONIS—*Continued*

λ	4311		4311*		4320		4327		4332		4337		4362	
	Vel	Wt	Vel	Wt	Vel	Wt	Vel	Wt	Vel	Wt	Vel	Wt	Vel	Wt
4861·527							+ 18·35	½			+ 27·40	½	+ 34·71	½
4549·766	+ 38·44	½					+ 28·31	1	+ 36·46	1	+ 41·18	½	+ 34·17	1
4481·400	+ 35·70	½	+ 30·73	½	+ 15·56	½	+ 33·76	½	+ 51·33	½			+ 28·21	½
4340·634					+ 20·34	½								
4101·880					+ 23·46	½								
3933·825	+ 18·55	1	+ 22·88	1	+ 25·29	½			+ 35·11	1	+ 37·15	1	+ 38·69	1
Weighted mean	+ 27·81		+ 25·49		+ 21·08		+ 28·45		37·54		+ 36·96		+ 31·77	
V_1	+ 27·60		+ 27·60		28·44		+ 28·56		28·87		28·93		+ 29·29	
V_2	·22		·22		·19		·25		·24		·24		·22	
Curv	·28		·28		·28		·28		·28		·28		·28	
Radial Velocity	− 0·3		− 2·6		7·8		− 0·6		+ 8·1		+ 7·5		+ 5·0	

*Check measures.

MEASURES OF σ LEONIS (*Continued*)

N	4768		4769		4784		4798		4807		4808		4814	
	Vel	Wt	Vel.	Wt	Vel	Wt	Vel.	Wt	Vel	Wt	Vel.	Wt	Vel	Wt
4861·527									− 21·04	½	− 19·11			
4549·766					20·87									
4481·400			− 8·04	½	9·19	½					− 7·40			
4340·634	− 24·64	1	− 14·35	½	12·03	½	9·60	1	− 13·42	½	− 32·40			
4101·890					23·40	½					− 47·96			
3970·177											− 14·03			
3933·825	− 27·21	½	− 6·01	½	− 25·29	1	− 22·21	½	− 24·51	½	− 31·87	1		
Weighted Means	25·49		− 10·11		− 18·78		− 12·12		− 18·11		− 26·78			
V_1	+ 25·56		+ 25·56		+ 24·98		+ 23·72		+ 22·71		+ 22·71			
V_2	− ·04		− ·07		− ·02		− ·06		− ·01		·07			
Curv	− ·28		− ·28		− ·28		− ·48		− ·28		·28			
Radial Velocity	− 0·3		+ 14·4		+ 6·9		+ 11·3		+ 4·3		− 4·4			

MEASURES OF σ LEONIS.—*Continued*

A	1827		1845		[illegible]		1876		1888		1896		1896*	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
1861·527	0·64	4	21·20	3	11·93	3	8·45	4			+ 0·16	4		
4549·700					+ 1·47	1								
4581·400			0·80	3	8·47	1	+ 2·30	3	2·55	4	+ 10·75	1	+ 14·91	1
4590·653	1·04	3	11·60	3	4·51	3	+ 0·46	3	+ 3·47	3	+ 12·13	2		
4233·078					1·47	4								
4141·017					2·47	4								
4128·231					+ 11·51	1								
4101·800	13·29	1			8·96	1	6·07	4	+ 3·08	4	+ 7·80	4		
4063·825	11·06	1	16·14	1	+ 0·25	3	+ 2·58	3	1·08	3	3·15	1	+ 2·83	4
Weighted Means														
[illegible]		9·50		17·30		6·38		0·47	+ 0·39		+ 15·94		+ 14·91	
V.		18·06		11·59		4·63		1·05	2·60		+ 1·16		+ 1·16	
V.		·00		·06		·00		·09	·09		·13		·14	
[illegible]		·28		·28		·28		·28	·28		·28		·28	
Residual Velocity		+ 8·3		0·9		2·1		1·9	2·6		+ 10·4		+ 9·3	

*Check measures.

MEASURES OF σ LEONIS—*Continued.*

λ	4905		4909		4917		4925		4935		4942		4947	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
4861·527	.....	.....	.....	.....	+ 7·54	¼	+ 1·60	¼	+ 24·85	¼	+ 11·54	¼	.....	.....
4481·400	+ 23·82	½	+ 16·18	½	+ 14·90	½	+ 31·73	½	+ 24·08	½	+ 12·37	½	+ 11·73	½
4340·634	.....	.....	+ 10·63	½	+ 19·52	½	+ 30·26	½	+ 17·21	½	+ 22·41	½	+ 21·14	½
4101·890	.....	.....	.....	.....	+ 12·02	¼	+ 25·40	¼	+ 18·66	¼	+ 21·43	¼	+ 24·72	¼
3933·825	.....	.....	+ 6·23	½	+ 15·46	½	+ 9·39	½	+ 6·73	½	+ 19·86	½	+ 26·09	½
Weighted mean	+ 23·82		+ 11·40		+ 14·92		+ 21·22		+ 17·41		+ 18·99		+ 20·38	
V_0	− 6·14		− 7·14		− 8·59		− 10·57		− 12·89		− 15·08		− 15·54	
V_1	− ·04		− ·05		− ·02		− ·15		− ·12		+ ·01		− ·14	
Curv.	− ·28		− ·28		− ·28		− ·28		− ·28		− ·28		− ·28	
Radial Velocity	+ 17·4		+ 3·9		+ 6·0		+ 10·2		+ 4·2		+ 3·6		+ 4·4	

MEASURES OF σ LEONIS—*Continued.*

λ	4954		4963		4966		4977		4999		5005		5014	
	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.	Vel.	Wt.
4861·527	.....	.....	+ 9·30	¼	.....	.....	.....	.....	+ 21·16	¼	.....	.....	+ 33·82	¼
4549·766	+ 21·58	¼	+ 3·60	¼	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4181·400	+ 26·90	¼	+ 18·74	½	+ 13·13	¼	+ 47·95	½	+ 35·87	½	+ 34·34	½	+ 19·97	¼
4340·634	+ 40·19	½	+ 18·71	½	+ 29·80	½	+ 30·81	¼	+ 23·89	½	+ 18·69	½	+ 46·39	¼
4101·890	+ 13·95	¼	+ 21·36	¼	+ 21·84	¼	+ 15·07	¼	+ 37·06	¼	.....	.....	+ 26·69	½
3933·825	+ 15·79	½	− 1·25	½	+ 8·56	½	+ 17·16	½	+ 25·04	½	+ 17·16	1	+ 33·66	½
Weighted mean	+ 21·86		+ 11·85		+ 18·61		+ 29·35		+ 32·54		+ 21·84		+ 31·56	
V_a	− 16·80		− 18·81		− 19·85		− 20·98		− 23·87		− 24·46		− 26·89	
V_d	− ·12		− ·16		− ·04		− ·01		− ·12		− ·09		− ·08	
Curv.	− ·28		− ·28		− ·28		− ·28		− ·28		− ·28		− ·28	
Radial Velocity	+ 7·7		− 7·4		− 1·2		+ 8·1		+ 8·3		− 2·7		+ 4·4	

MEASURES OF σ LEONIS—*Concluded.*

λ	5022		5031		5039		5039*		5048		5056			
	Vel.	Wt	Vel.	Wt	Vel.	Wt	Vel.	Wt	Vel.	Wt	Vel.	Wt	Vel.	Wt
4861·527	+ 17·64	½							+ 23·71	½				
4549·766														
4481·400	+ 32·92	½	+ 27·35	½	+ 29·80	½	+ 27·10	½	+ 26·71	½	+ 36·90	½		
4340·634	+ 32·09	½	+ 20·31	½	+ 35·69	½	+ 39·35	½	+ 32·73	½				
4101·890														
3933·825					+ 30·09	½	+ 25·60	½	+ 15·25	½				
Weighted mean	+ 28·80		+ 23·84		+ 32·49		+ 32·01		+ 26·31		+ 36·90			
V_0	− 28·02		− 29·20		− 29·29		− 29·29		− 29·16		− 28·83			
V_1	− ·18		− ·23		− ·22		− ·22		− ·24		− ·29			
Corv.	− ·28		− ·28		− ·28		− ·28		− ·28		− ·28			
Radial Velocity	+ 0·4		− 5·9		+ 2·4		+ 2·2		− 3·4		+ 7·5			

*Check measures.

Dominion Observatory,
Ottawa,
March, 1913.